REMARKS

Applicants thank the Examiner for indicating that claims 29, 30, 33 and 34 incorporate allowable subject matter. Applicants amend claims 26 to incorporate the allowable subject matter of claim 33. Claim 33 is canceled. Claim 34 is amended to depend from claim 26. Claims 1-14 remain withdrawn. Claims 15-24 were previously canceled. Claims 25-32 and 34 are currently pending, of which claims 25 and 26 are independent. No new matter is introduced. Applicants respectfully submit that the pending claims are in condition for allowance.

Interview with the Examiner

Applicants thank the Examiner for courtesies extended during the interview on November 7, 2007.

During the interview, Applicants explained the present invention with reference to Figure 2. Applicants argued that the present invention is patentably distinct over the cited Rozendaal reference. Applicants specifically argued that the Rozendaal reference teaches that a period of time for which nitrogen is to be supplied is calculated based upon the capacity of the vessel and the nitrogen flow rate (the evacuating medium), which is the gas *to be supplied to* the vessel. Applicants also explained that the present invention teaches calculating the predetermined time based on the capacity of the reservoir and the amount of hydrogen gas supplied to the reservoir, which is then diluted with supplied air. As such, the present invention calculates the time based on the volume of the medium and the amount of gas *that is present in* the vessel, as opposed to employing the flow rate of the evacuating medium.

The Examiner appreciated the foregoing arguments and stated that the arguments are likely to define over the Rozendaal reference. The Examiner indicated that he will need to review the reference in detail and update his search.

Rejection of Claims under 35 U.S.C. § 103

Claims 25 and 28 are rejected under 35 U.S.C. §103(a) as being unpatentable over Japanese Patent Application Publication Number JP 2000-357530 (hereafter "JP '530") in view of United States Patent Publication Number 2003/0194590 to Cargnelli et al (hereafter

"Cargnelli") in view of United States Patent Number 4,853,045 to Rozendaal (hereafter "Rozendaal").

Claim 27 is rejected under 35 U.S.C. §103(a) as being unpatentable over the JP '530 reference in view of the Cargnelli reference in view of Rozendaal reference and in further view of Japanese Patent Publication Number JP 03-010077 (hereafter "JP '077").

Claims 26 and 32 are rejected under 35 U.S.C. §103(a) as being unpatentable over the JP '530 reference in view of the Cargnelli reference in view of United States Pre-Grant Publication Number 2003-0087138 to Margiott et al. (hereafter "Margiott").

Claim 31 is rejected under 35 U.S.C. §103(a) as being unpatentable over the JP '530 reference in view of the Cargnelli reference in view of Margiott reference and in further view of the JP '077 reference.

Applicants respectfully submit that the JP '530 reference does not teach or suggest the predetermined period of time being calculated from a capacity of the reservoir and an amount of hydrogen gas discharged from the fuel cell, as required by claim 25. The Examiner combines the teachings of the JP '530 reference with the teachings of the Rozendaal reference to reject this feature of claim 25. However, the Rozendaal reference, alone or in combination with the JP '530 and Cargnelli references do not teach or suggest that the predetermined period of time is calculated from a capacity of the reservoir and an amount of hydrogen gas discharged from the fuel cell, as required by claim 25.

The Rozendaal reference teaches that a period of time for which nitrogen is to be supplied is calculated based upon the capacity of vessel (1) and the nitrogen flow rate in order to substitute air in the vessel (1) by dry nitrogen. See Rozendaal at Col.4, lines 3-10. In contrast, an exemplary embodiment of the present invention proposed that a period of time for which cathode gas is to be supplied is calculated based upon the capacity of the reservoir and the amount of hydrogen gas discharged from the fuel cell into the reservoir in order to dilute and discharge the hydrogen gas in the reservoir.

According to the technique of the Rozendaal reference, consideration is given to only to the capacity of the vessel and the flow rate of nitrogen to be supplied into the vessel, i.e. the subject by which air is substituted, *the evacuating medium*, not the amount of air, i.e. the object which is to be substituted by the nitrogen, *the evacuated medium*.

In contrast, according to the configuration consistent with the present invention as set forth in claim 25, consideration is given to the capacity of the reservoir and the amount of hydrogen gas supplied (purged) into the reservoir, i.e. the object which is to be diluted by air, *the evacuated medium*. Accordingly, as the amount of hydrogen gas purged is smaller, the period of time for which the cathode gas is to be supplied may be set shorter, while as the amount of hydrogen gas purged is larger, the period of time may be set longer. In this way, an efficient dilution may be performed based upon an optimum period of time calculated in accordance with the purge amount. Therefore, with this feature of the embodiment of the present invention as recited in claim 25, the energy consumption for dilution required after stopping the generation of electric power in the fuel cell can be minimized. The Rozendaal reference cannot provide this advantageous effects in that it teaches to calculate the period of time without consideration given to the amount of air in the vessel; instead, only based upon the flow rate of nitrogen to be supplied.

The present invention seeks to prevent the backflow of hydrogen not yet purged and remaining in the reservoir after stopping the power generation, to the fuel cell stacks and pipes, which would not occur during normal operation of power generation but could occur due to spontaneous diffusion or the like of hydrogen after stopping the generation of electric power in the fuel cell.

Furthermore, dilution after stopping generating of electric power in the fuel cell cannot be carried out by the power generated in the fuel cell, and thus the power from an outside storage battery or the like provided for use in startup of the fuel cell, for example, should be utilized instead. Accordingly, the greater the energy consumed for dilution of hydrogen after stopping power generation is, the larger the capacity of such a storage battery should be, with the result that the whole system would necessarily be larger and the cost would be higher.

In this aspect, the present invention provides advantages such that even when dilution of hydrogen is necessary after stopping power generation, the electric energy consumption required for the dilution can be minimize, and the miniaturization and cost down of the system can be achieved.

In light of the foregoing amendments and arguments, Applicants respectfully submit that the Rozendaal reference, alone or in combination with the JP '530 and Cargnelli references do not teach or suggest each and every element of claim 25.

Dependent claims 27-30 add separate and patentable limitations to claim 25. As such, for this and the reasons set forth above, Applicants respectfully submit that the dependent claims also define over the art of record.

Claim 26 is amended to incorporate allowable subject matter of claim 33. Claims 31, 32 and 34 depend from claim 26 and, as such, incorporate each and every element of claim 26. Accordingly, Applicants respectfully submit that claims 26, 31, 32 and 34 recite allowable subject matter.

Applicant respectfully requests that the Examiner reconsider and withdraw the rejection of claims 25-28, 31 and 32 under 35 U.S.C. §103(a).

CONCLUSION

In view of the above amendment, applicant believes the pending application is in condition for allowance.

Any fee due is authorized to be charged to our Deposit Account No. 12-0080, under Order No. IIW-031RCE from which the undersigned is authorized to draw. If the requisite petition does not accompany this response, the undersigned hereby petitions under 37 C.F.R. §1.136(a) for an extension of time for as many months as are required to render this submission timely.

Dated: November 13, 2007

Respectfully submitted,

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